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AIR FORCE SPACE COMMAND

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Personnel

SPACE TRAINING SYSTEM MANAGEMENT

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This instruction implements Air Force Instruction (AFI) 36-2251, ***Management of Air Force Training Systems*** and reflects guidance in Air Force Policy Directive (AFPD) 10-6, ***Mission Needs and Operational Requirements***; AFPD 10-9, ***Lead Operating Command Weapon Systems Management***; AFPD 36-22, ***Military Training;*** Air Force Instruction (AFI) 10-601, ***Operational Capability Requirements***; AFI 21-114, ***Managing Intercontinental Ballistic Missiles Maintenance,*** AFI 21-116, M*aintenance Management of Communications-Electronics* and AFI 36-2201, Volume 1, ***Training Development, Delivery, and Evaluation***. This guidance prescribes the roles and responsibilities, processes and procedures associated with planning, acquisition and sustainment of training systems that support Air Force Space Command (AFSPC) operations and maintenance activities. It applies to military and civilian personnel assigned to Headquarters (HQ) AFSPC and field units as well as Air National Guard and Air Force Reserve units and members.

1. General:

1.1. AFSPC's goal is to ensure realistic training capabilities at the optimum level of concurrency, fidelity and interoperability to guarantee mission accomplishment and effective joint operations. AFSPC, in coordination with Air Education and Training Command (AETC), will provide a seamless continuum of initial, unit and supplemental training that results in fully qualified operators and maintainers prepared to support commitments to US Strategic Command (USSTRATCOM), US Northern Command (USNORTHCOM), North American Aerospace Defense Command (NORAD) and global US military operations.

1.2. Successful training system management requires effective communications between AFSPC units, 14th and 20th Air Forces (AF), the Space and Missile Systems Center (SMC), the Space Warfare Center (SWC), HQ AFSPC, the Electronic Systems Center (ESC), the Ogden Air Logistics Center (OO-ALC), AETC and the Air Staff. Within HQ AFSPC, ongoing interaction between the Directorates of Air and Space Operations (XO), Requirements (DR), Plans (XP) and Logistics and Communications (LC) ensures a command focus on training excellence. As with prime mission systems, accurate and timely requirements identification ensures training systems are acquired and sustained in the right number and configuration to support mission needs. Fundamental to this effort is the early identification of training requirements to AETC for their training planning and programming processes.

1.3. This instruction focuses specifically on training systems, acknowledging that traditional weapon system acquisition and sustainment processes include training as an integral part of prime mission system management. In recognition of the importance of training to the mission; the roles, responsibilities, forums and processes outlined here apply to training system management across AFSPC weapon systems. Numerous compliance requirements unique to training systems are highlighted in applicable portions of this instruction. These processes integrate with command planning, requirements, funding and sustainment processes to ensure training systems remain current with prime mission system configuration. To accomplish this, AFSPC training systems shall receive the same precedence rating as the prime mission systems they support and the same visibility, funding, and documentation priority.

1.4. This instruction uses the "Training System" definition provided in AFI 36-2251: "A systematically developed curriculum including, but not necessarily limited to, courseware, classroom aids, training simulators and devices, operational equipment, embedded training capability, and personnel to operate, maintain, or employ a system. The Training System includes all necessary elements of logistic support".

1.5. This instruction complements other command documents to provide a comprehensive overview of AFSPC training. For example, the Mission Support Plan, Mission Area Plans, and the Space Training Roadmap also address specific aspects of training capabilities.

2. Roles and Responsibilities:

2.1. **HQ AFSPC Directorate of Air and Space Operations (XO):**

2.1.1. Establishes standards, tasks and formal training requirements for operations training systems.

2.1.2. Advocates, monitors and allocates funding for fielded operations training systems.

2.1.3. Assigns stand-alone training systems to closely-aligned program elements.

2.1.4. Hosts an annual AFSPC operations training conference.

2.1.5. Maintains an operations training resource inventory, oversees movement of training devices and manages disposition of excess training devices (in coordination with the System Program Office [SPO]).

2.1.6. Develops, tracks and distributes metrics on operations training system utilization and effectiveness. Analyzes trends to identify training system shortfalls and new requirements.

2.1.7. Identifies and prioritizes operational requirements to DR for training system acquisition and modification; advocates modification recommendations.

2.1.8. Uses Instructional Systems Development (ISD) to determine required training equipment capabilities.

2.1.9. Participates on Integrated Concept Teams (ICT) and Training Planning Teams (TPT) for systems in acquisition. Assumes responsibility for the prime mission system/training system and TPT at operational acceptance/initial operational capability (IOC).

2.1.10. Ensures training system concepts and requirements are documented in requirements publications, the System Training Plan (STP) and the Training System Requirements Analysis (TSRA); determines the need for simulator certification (SIMCERT) and simulator validation (SIMVAL). Advocates for SIMCERT and SIMVAL funding early in program acquisition.

2.1.11. Provides trained Mission Ready personnel to support the NORAD, USSTRATCOM and USNORTHCOM missions.

2.1.12. Establishes/develops policy, guidance, standards, tasks and formal operations training requirements for space combat operations training and evaluation.

2.1.13. Ensures AETC involvement in training system modification for timely development of training. Provides course training requirements to AF/XOS and AETC.

2.1.14. Develops operations technical order/manual requirements, monitors accuracy and initiates corrective action.

2.1.15. Manages the operations standardization and evaluation program.

2.1.16. Identifies test team training requirements to the TPT.

2.1.17. Ensures operations training device configuration control, quality assurance, and simulator certification (SIMCERT) programs.

2.2. **HQ AFSPC Directorate of Requirements (DR):**

2.2.1. Focal point for acquisition and major modification of command training systems. In conjunction with the SPO, acquires/modifies training systems concurrent with prime mission systems to ensure training system concurrency. Ensures AETC involvement in training system acquisition for timely development of training. Advocates, monitors and allocates funding for training-related activities for new systems/major modifications.

2.2.2. Identifies, develops, documents and staffs operational requirements from validation to approval, to include SIMCERT/SIMVAL, when applicable.

2.2.3. Acquires training systems that meet training requirements through SMC and ESC. Ensures space training device acquisition efforts provide required AETC and AFSPC training capabilities.

2.2.4. Ensures appropriate Type 1 Training is provided in conjunction with system modifications and new acquisitions.

2.2.5. Issues policies, procedures, and guidance for implementation of DoD acquisition guidance regarding training system development and management.

2.2.6. Appoints system command leads as the AFSPC points of contact (POC) for acquisition or major modification programs.

2.2.7. Provides training system acquisition support and guidance to command leads, TPT and TSRA teams.

2.2.8. Chairs TPT for systems in acquisition, participates on TPT for fielded systems.

2.3. **HQ AFSPC Directorate of Logistics and Communications (LC):**

2.3.1. Establishes standards, tasks and formal training requirements for maintenance training systems; develops maintenance training and evaluation policy and guidance.

2.3.2. Manages maintenance training system sustainment activities.

2.3.3. Jointly responsible with 20 AF/LG for procurement, configuration control and administration of the ICBM Maintenance Trainer Program.

2.3.4. Ensures currency of maintenance training system technical orders and manuals.

2.3.5. Ensures configuration control of maintenance training devices.

2.3.6. Develops and monitors metrics on maintenance training device usage.

2.3.7. Identifies communications/maintenance training system requirements to DR and the TPT.

2.3.8. Participates on TPT for new and fielded systems.

2.3.9. Maintains a maintenance training resource inventory, oversees movement of training devices and manages disposition of excess training devices (in conjunction with the SPO).

2.4. **HQ AFSPC Directorate of Plans and Programs (XP):**

2.4.1. Programs funding for approved training requirements based on AFSPC priorities.

2.4.2. Leads and facilitates AFSPC Integrated Planning Process (IPP) activities.

2.4.3. Develops the AFSPC Program Objective Memorandum (POM) input.

2.4.4. Develops the Manpower Estimate Report (MER) for new systems.

2.4.5. Co-chairs the Space Training Technical Planning Integrated Product Team (TPIPT) with SMC/AX.

2.4.6. Participates on TPT for fielded systems.

2.5. **Space Professional Management Office (DPAX):**

2.5.1. Establishes policy, procedures and funding requirements for the Space Professional Development program.

2.5.2. Directs policies and issues relating to space professional development, education, training and certification.

2.5.3. Develops, integrates and implements, where appropriate, National Security Space community professional development initiatives.

2.6. **Space and Missile Systems Center:**

2.6.1. Develops, defines, deploys, procures and sustains (logistics support and configuration management) space training systems to meet AFSPC and AETC requirements for the life of the associated weapon system (SPOs). Integrates training systems across weapon systems where applicable.

2.6.2. Co-chairs the Space Training TPIPT with XP (AX).

2.6.3. Participates on TPT for new and fielded systems (AX and SPOs, as required).

2.6.4. Participates in the annual AFSPC Training conference (AX).

2.7. **Space Warfare Center:**

2.7.1. Assesses training system capabilities during operational test activities, as required.

2.7.2. Provides space education planning and funding inputs to XP.

2.7.3. Develops and executes space education programs in coordination with the Space Professional Development Office (CVX).

2.7.4. Participates in annual AFSPC training conference, as required.

2.8. **14th and 20th Air Forces:**

2.8.1. Provide inputs on training system effectiveness.

2.8.2. Participate in AFSPC training conferences and TPTs, as required.

2.8.3. Monitor use of simulators in support of training and evaluation programs.

2.8.4. 20 AF/LG: Jointly responsible with AFSPC/LC for procurement, configuration control and administration of the ICBM Maintenance Trainer Program.

2.8.5. Convey common space and missile operations training needs to HQ AFSPC/XOT. This does not preclude system-unique acquisition or modification. Common training needs may support multiple units or locations.

2.9. **Space Wings:**

2.9.1. Conduct quarterly training reviews to assess training system effectiveness.

2.9.2. Provide inputs on training system effectiveness and requests for training system modifications through their respective numbered air force (NAF) to XO and LC.

2.9.3. Participate in AFSPC training conferences and TPTs, as required.

2.9.4. Manage unit training device programs.

2.9.5. Maintain local ICBM maintenance training facilities.

2.10. **Other Agencies:**

2.10.1. AETC:

2.10.1.1. Provides ISD advice as required.

2.10.1.2. Participates on TPT for new and fielded systems, assists in identification of training requirements, establishing training strategies, obtaining training resources, and STP development and update.

2.10.1.3. Develops course resource estimates (CRE) at the request of HQ AF/XOS to identify resource requirements for new training requirements, based on AFSPC's Master Task List (MTL). (HQ AF/XOS is the Air Staff proponent for changes to AETC formal training courses).

2.10.1.4. Participates in training system acquisition (HQ AETC/XPR) and identification of MTL, manpower, and equipment issues (HQ AETC/DOO).

2.10.1.5. Plans, programs, and budgets for all of the AFSC-awarding training.

2.10.1.6. Budgets and programs sustainment costs (operations and maintenance, other procurement, MILCON) for AETC initial skills and supplemental space operations courses. Unfunded AETC requirements are advocated by HQ AF/XOS in coordination with the HQ AF/DP Personnel and Training Panel.

2.10.1.7. Provides training system acquisition support, including support in the development and review of requirements documents, Type 1 Training.

2.10.1.8. Identifies AETC training system requirements to AFSPC/DR during system acquisition.

2.10.1.9. Provides training system analyses and assessments.

2.10.1.10. Evaluates new training technologies to determine applicability to AF training programs.

2.10.2. **Air Force Operational Test and Evaluation Center (AFOTEC):**

2.10.2.1. Conducts Operational Test and Evaluation (OT&E) for new/modified systems and associated training systems, as required.

2.10.2.2. Identifies test team training requirements for system OT&E to AFSPC/DR.

2.10.2.3. Participates on system-specific TPT for which it has testing responsibility.

2.10.3. **OO-ALC:**

2.10.3.1. Develops, defines, deploys, procures and sustains ICBM training systems to meet AFSPC and AETC requirements for the life of the weapon system.

2.10.3.2. Provides configuration management for ICBM operations and maintenance training devices.

2.10.3.3. Provides cost estimates and budget submissions for training device acquisition and modification as required by HQ AFSPC/DR.

2.10.3.4. Responsible for technical data management to include technical orders, technical

manuals and engineering drawings and specifications.

2.10.3.5. Manages ICBM software baseline for operations and maintenance training devices. Incorporates changes to the software baseline as directed by the AFSPC Operational Control Board.

2.10.3.6. Manages the Contractor Logistics Support (CLS) contract for ICBM training devices.

2.10.3.7. Participates in the annual AFSPC Training conference.

2.10.4. **ESC:**

2.10.4.1. Develops, defines, deploys, procures and sustains (logistics support and configuration management) space training systems to meet AFSPC and AETC requirements for the life of the associated weapon system. Integrates training systems across weapon systems where applicable.

2.10.4.2. Participates on TPT for new and fielded systems, as required.

2.10.4.3. Participates in the annual AFSPC Training conference, as required.

2.11. **Unified Commands, other MAJCOMs, Services, Allies, or DoD Agencies:**

2.11.1. Participate on TPT to ensure their system training requirements are defined and documented in the STP.

3. Planning for Training Systems:

3.1. The AFSPC IPP is the primary means of assessing command mission capabilities in the near-, mid- and long-term. XP has the lead for the planning process, with the participation of representatives from each of the command's mission areas: Force Enhancement, Space Support, Space Control, and Force Application, as well as Mission Support. Planners use a strategy-to-task approach to develop a Mission Area Assessment (MAA) that identifies and prioritizes required mission-related tasks and subtasks. Current and planned capabilities to perform the tasks/subtasks are then assessed using appropriate measures to determine shortfalls. The shortfalls are prioritized and documented in the Mission Needs Analysis (MNA). Next, a Mission Solutions Analysis (MSA) provides fiscally unconstrained candidate solutions to address the capability shortfalls. Finally, XP develops an Integrated Investment Analysis (IIA) that provides fiscally constrained profiles based on MAA and MNA priorities to influence funds distribution.

3.2. The results of these efforts are documented in Mission Area Plans (MAP) for the Force Enhancement, Space Support, Space Control and Force Application mission areas and the Mission Support Plan (MSP) for the support mission area. These iterative, baseline planning documents forecast modernization efforts within each mission area to attain required capabilities. The Strategic Master Plan (SMP) is a combination of the information contained in the MAPs and MSP.

3.3. Traditionally, training is viewed as part of the prime mission system and therefore planning, funding and development for the associated training system is embedded in the prime mission system processes. Based on this approach, specific training systems will be addressed in each MAP and the MSP and ultimately the SMP as a subset of the coverage for the prime mission system. The MSP addresses training issues that cross mission areas. Training often constitutes a separate capability and frequently requires a separate materiel solution to ensure full mission readiness. To fully address train-

ing requirements, planners and functional managers must include specific details on training systems in planning documents to ensure full training capability requirements are adequately addressed. The combined efforts of XOT, as the advocate for operations training programs; XO system functional managers, DR command lead and XPX are required to ensure accurate representation of training requirements.

3.4. In addition to training, the planning process addresses the closely related areas of education and exercises. Education efforts are the primary focus of CVX, the Space Operations School in the 595th Space Group at the Space Warfare Center and DP continuing education programs. These organizations make planning inputs on their programs to XP for inclusion in the MSP. In addition, XOT provides inputs on AFSPC role in AF, combined and joint exercises.

3.5. As part of the MSA process, the Space Training TPIPT explores modernization opportunities for AFSPC training, education and exercises. It provides candidate solutions to MNA training deficiencies in all mission areas identified and documented by AFSPC and AETC during their planning processes. The Space Training TPIPT canvasses industry and academia to identify technologies and methodologies and offer solutions, developing inputs that cut across mission areas. Membership of the Space Training TPIPT includes representatives from AF/XOSO, AFSPC/XO, AETC/XP, SMC/AX, ESC, Aeronautical Systems Center (ASC), Air Force Research Laboratory (AFRL) Human Factors Directorate, and industry. The Space Training Acquisition Office (SMC/AXLY) supports this effort by participating in concept calls and evaluations, as co-chair (with XPX) of the Space Training TPIPT and by providing planning inputs to XPX.

4. Training System Requirements Generation and Acquisition:

4.1. When a material solution is needed to correct deficiencies identified during IPP, this need is formally stated in capabilities documents developed by DR. This documentation is the first step in the Joint Capabilities Integration and Development System (JCIDS). DR is responsible for identification of requirements to SMC and ESC and serves as the liaison between the acquisition and operations communities.

4.2. Training Requirements Identification Process. As prime mission system requirements are refined, DR, LC and XO must ensure training requirements are addressed simultaneously. AFSPC and the functional communities all play an important role in identifying needed training capabilities. AETC provides ISD advice and CRE based on AFSPC-identified training requirements. The process will vary depending upon the specific requirements and whether a system acquisition or modification is more appropriate. Impact on other training systems must also be assessed. An accurate trained personnel requirement and POM inputs are also fundamental to this effort. See AFSPCHOI 16-10, ***Headquarters Air Force Space Command Corporate Structure*** for details. The training system must be delivered, installed, and logistically supportable by the identified training need date, which in turn supports operational acceptance/IOC.

4.3. DR assigns a command lead to serve as the HQ AFSPC focal point for developing and staffing requirements documents and formation of an integrated concept team (ICT) early in the acquisition program. For additional command lead responsibilities see AFSPCHOI 10-1.

4.4. Integrated Concept Team. The ICT assists the command lead in acquisition tasks. The team is comprised of action officers from HQ AFSPC and other DoD agencies with expertise in operations,

hardware and software engineering, logistics, contracting, safety, security and training. ICT membership may change as requirements are updated during acquisition.

4.5. **Training Planning Team.** The TPT is the primary body for identification of training requirements in the acquisition and management of training systems. DR is responsible for establishing the TPT early in the acquisition process (as early as Milestone A/Phase A). The branch chief responsible for the prime mission system chairs the TPT, and the command lead serves as alternate chairman and team leader to work day-to-day TPT issues. The TPT chair has the authority to task any member of the TPT to accomplish actions items or write portions of the STP. TPT members are from all pertinent areas in training system life cycle design, development, acquisition, support, modification, funding, and management. Membership changes as the program matures and the system is fielded; however, the TPT conducts planning and management activities throughout the system life cycle. Once the prime mission system becomes operational XO assumes TPT responsibility and chair responsibilities transfer to the applicable XO branch chief.

4.5.1. TPT responsibilities include:

Advocating for a complete training system, including funding

Analyzing and identifying training needs

Identifying training and training resource requirements (AFSPCI 36-2202, ***Mission Ready Training, Evaluation and Standardization Programs,*** outlines the process for submitting new or changed training program requirements)

Developing the training concept

Horizontal integration of training systems across weapon systems

Developing and maintaining the STP

Documenting training planning decisions and rationale

Resolving training-related problems and issues

Supporting the acquisition of training systems

Determining Type 1 Training requirements and funding

Identifying and reviewing training documentation (ISD analyses, training materials, etc.)

Tracking training funding through the command leads, SPOs, and PEMs

4.6. **Key Documents in Training System Acquisition:**

4.6.1. System Training Plan. The STP is an iterative planning document that defines the justification, design, development, responsibilities, funding, resources, support, modification, operation, and management of a training system. A STP is required for all AFSPC systems and is approved by the TPT chair. Once approved, it is directive in nature and is used by the PEMs to determine training priorities for POM funding requests. It supports acquisition and modification processes, requirement documents, milestone/phase decisions, and identifies the concepts and strategy to attain and maintain desired training capability. In addition, the STP establishes milestones and

schedules to ensure training system development, testing, and fielding to support the prime mission system at operational acceptance/IOC. The STP also documents the results of training task analyses. It is prepared as soon as possible after Milestone A/Phase A and reviewed and updated throughout acquisition. It is reviewed annually by the TPT once the system is fielded to ensure training system effectiveness and identify requirements for modification or new acquisition. AF/XOOT reviews all Acquisition Category I and II STPs. See AFI 36-2251, Attachment 2 for additional STP information and format.

4.6.2. Command, Control, Communications, Computers and Intelligence (C4 I) and Information Technology (IT) documentation. The program manager/designated representative must ensure applicable documents are accomplished to address certification requirements for incorporation of training systems into communications architectures. There are several key documents that may be required. The Command, Control, Communications, Computers and Intelligence Support Plan (C4 ISP) identifies C4I needs, dependencies and interfaces focused on interoperability, supportability and sufficiency. C4ISP development begins at the initiation of acquisition and continues throughout. The System Security Authorization Agreement (SSAA) documents security policy, architecture and processes and is a formal agreement among the Designated Approval Authority (DAA), Certification Authority, the program manager and the user. The program manager develops the SSAA based on DoDI 5200.40, ***DoD Information Technology Security Certification and Accreditation Process.*** The Certificate of Networthiness helps ensure the system adheres to security policy and is compatible with the Air Force Enterprise Network. The Certificate to Operate verifies the system and AFSPC are ready for implementation on the Air Force Enterprise Network. Connection Approval is the final system certification by the site DAA prior to connection with the local infrastructure. Consult LCA for additional information on C4I and IT documentation.

4.6.3. Requirements Documents. Acquisition for space systems is governed by processes and procedures in DoDI 5000.2***, Operation of the Defense Acquisition System*** or by National Security Space Acquisition Policy 03-01, as applicable. The JCIDS and acquisition management system use integrated architectures and an analysis of doctrine, organization, training, materiel, leadership, personnel, and facilities (DOTMLPF) in an integrated, collaborative process to define desired capabilities to guide the development of systems. Required capabilities are described in the Initial Capabilities Document (ICD). As acquisition progresses, the Capability Development Document (CDD) is used to support program initiation and refine the integrated architecture. The Capability Production Document (CPD) defines requirements during Production and Deployment/Phase C. DR develops these requirements documents.

4.6.4. Concepts. Written by XO, operating, functional and enabling concepts articulate required capabilities. They serve a critical role in development by providing a focus for capabilities-based resource allocation and experimentation throughout the full spectrum of joint and combined operations. Concepts also develop an understanding of the linkage between fielded capabilities/programs and proposed systems/processes, and the warfighting impact of proposed methods of employment, specific capabilities, and potential effects. Concepts impact DOTMLPF.

4.6.5. Single Acquisition Management Plan (SAMP). The SAMP is a concise, integrated document developed by the program manager that describes all relevant issues, recommends an acquisition approach and is tailored to specific program needs. The SAMP provides the management

framework to support program decisions. Training may be addressed in various sections of the SAMP. A SAMP or amendment is required as the result of either:

1. Acquisition Strategy Panel direction for the initiation of a new program; or
2. a major change in acquisition or program management strategy, to include changes to scope, dollar value, or contract type.

4.6.6. MTL. The MTL is developed by the program manager or designated representative, coordinated with appropriate HQ AFSPC/XO divisions and updated by the TPT. It is derived from analysis of mission tasks, prime mission and training system tasks, legacy mission equipment and additional requirements based on personnel, safety, cost, and environmental constraints. The MTL establishes a training requirements baseline and is a necessity for AETC CRE development.

4.7. **Training System Requirements Analysis.** A TSRA is a systematic analysis of new prime mission systems or major system modifications to determine training system requirements. A TSRA is required for all AFSPC acquisitions or as determined by the TPT. The TSRA is a formal, documented effort using the ISD process and supportability analyses. Human factors, manpower, personnel, risk assessment, training, safety, facilities, and health hazards considerations are key areas of the assessment. A TSRA should be conducted early in acquisition and address requirements throughout the system life cycle. This includes Type 1 Training necessary to achieve initial and follow-on training. The SPO program manager is responsible for the TSRA, working in conjunction with representatives from DR, XO, LC and AETC. In most cases, the TRSA is a contractor effort. To facilitate the process, the TPT develops a consolidated list of common mission tasks by functional area from the MTTL. See AFI 36-2251, Attachment 3 for additional TSRA information.

4.8. **Off-line Requirements.** Operations training devices will be physically separated from the operational system. All processing for the simulation must occur on a separate computer. Electronic transfer of information from the operational system to the training system to provide real-world scenarios for training purposes is permitted. However, the link between the operational and training systems must preclude transfer of data from the training system to the operational system. Inputs from the operational system for training purposes will not be injected in real-time via a physical connection between the systems. The simulator may connect to a dedicated training network to support AF distributed training requirements using real-world C3 systems. The use of tapes, CD-ROMs or other transportable media is acceptable. If the simulator is capable of reconfiguration to connect to real-world C3 systems, units must establish procedures to ensure crew personnel fully understand current system status to prevent training on an operational system. These procedures and any deviations from off-line requirements must be approved by AFSPC/XO. Submit waiver requests to AFSPC/XOT.

4.9. **Facilities.** Determination of appropriate training facilities and the need for new facilities frequently requires a site survey. These surveys are led by AFSPC/XPIB with assistance from AFSPC/CE, the user and AETC (if applicable). Facility requirements and location must be approved by AFSPC and AETC (if applicable) before plans are final. MILCON is programmed and funded by the user command unless the MILCON is in support of a lead command-managed acquisition program (programmed/funded by the lead command).

4.10. **Technical Orders.** Technical orders and space operations procedures used for system operations and maintenance must be validated by the contractor and verified by the government. Technical orders must have completed the contractor's validation as a minimum before the start of Type 1 train-

ing. If verification has been completed, red-line copies are acceptable for Type 1 training. Final technical orders must be available for use prior to the start of formal schoolhouse training. See AFI 21-114 and AFSPCI 10-1202, ***Crew Operations***, for added details.

4.11. **SIMCERT.** An overview of SIMCERT requirements should be included in the STP/SAMP/HSI. Initial certification should be complete within 90 days of training device delivery. Additional certifications will be completed within 60 days of installation of major modifications. See AFSPCI 36-2205, ***Operations and Management of Space Training Devices*** and individual SIMCERT plans for additional information.

4.12. **SIMVAL.** An overview of the training system validation requirements should be included in the STP/SAMP/HSI. Each simulator acquisition will include a SIMVAL program to support generation and employment of required threat representations, the comparison of simulator performance to the current intelligence assessment, and the process for correcting deficiencies throughout the life cycle of the training system. SIMVAL reports will document significant deficiencies and the impact to training.

5. Support of Fielded Training Systems:

5.1. Once a prime mission system has attained IOC/operational acceptance, responsibility for monitoring the effectiveness and currency of the associated training system transfers to XO. The directorate responsible for the prime mission system is responsible for the training system. The TPT, chaired by the XO branch chief with prime mission system responsibility, continues to update the STP through annual reviews to ensure funding, schedule, and training requirements are adequately addressed throughout the life cycle. An XO representative other than the applicable branch chief may serve as alternate chairman and team leader to work day-to-day TPT issues. The TPT charter is updated to reflect the new structure. Modifications to fielded systems necessitate concurrent modifications to associated training systems.

5.2. **Training System Assessment:**

5.2.1. Training systems for fielded prime mission systems must be continually assessed to ensure they meet the user's needs and are concurrent with the prime mission system. The TPT has primary responsibility for this function. TPTs for each system will meet annually to assess training system effectiveness. The TPT reviews all aspects of the training system and reports on the health of the system to XOT or LCM. Metrics that track utilization and effectiveness of training systems support this assessment (see **Attachment 3** and AFSPCI 21-114, ***ICBM Maintenance Management***). Units will report metrics for operations training systems to XOT by 31 January and 31 July. XOT will provide this data to the TPT to aid in their assessment and identification of new training requirements. The TPT's primary goal is to ensure the STP is current and that training system shortfalls are identified and adequately addressed. In assessing training system performance, the TPT will review compliance with applicable guidance, trends, use rates, logistics support, funding (budgeted and programmed), courseware, configuration management, hardware, software, instructor workload, manning and system deficiencies. XOT or LCM will ensure training system requirements identified by the TPT are forwarded to the appropriate agency to initiate action.

5.2.2. Each TPT consists of representatives from XOT, XOS, DR SEIO, XPX, SMC/AX (Space Training Acquisition Office-STAO), LCM and ESC (as required) designated in writing. Addi-

tional members will be added at the discretion of the TPT chair with the approval of the affected division chief.

5.2.3. Squadron representatives identify, document and track training requirements. Group-level training program reviews (such as Standardization and Training Review Panels) generate consolidated inputs on training system effectiveness and new requirements. The units will conduct quarterly reviews of wing training and evaluation programs, including error analysis, initial and unit qualification training issues, simulator utilization, training system deficiencies and other pertinent information.

5.2.4. Prior to the annual TPT meetings, XOT will publish a "Training Call",requesting inputs from the units on operations training system deficiencies or enhancements. Maintenance deficiencies are handled IAW AFSPCI 21-114. Units identify operations deficiencies and recommendations using AF Form 1067 to XOT through their respective NAF. The TPT prioritizes the deficiencies based on mission impact. This prioritization forms the basis for the TPT input to XOT on modifications to each operations training system.

5.2.4.1. In the case of a funding shortfall, XOT will ensure the appropriate functional manager and PEM are aware of the need for corrective action, taking action to identify adequate support in the execution, budget, and planning cycles. Coordinate operations training system priority in the context of overall system funding with Assistant XO.

5.2.4.2. Minor changes to AETC courseware are forwarded to the appropriate squadron in the 381st Training Group (TRG). Major changes are accomplished IAW AFSPCI 36-2202 and coordinated through AF/XOS. Course changes with resource impacts require HQ AF/XOSO approval. If the changes impact training resources, AETC will normally prepare a CRE needed to initiate and sustain the changes (may lead to an AETC POM submission which HQ AF/XOS will need to advocate). If AETC resources are available, the changes will be implemented based on AF/XOSO direction. Insufficient funding requires input by the AFSPC or AETC PEM into the command corporate process.

5.2.4.3. The TPT may identify training shortfalls that require an AFSPC materiel solution, either as a modification to an existing system or development of a new system. In this case, XOT will identify the requirement to DR to ensure it is addressed by the JCIDS, is validated and is reflected in updated requirements documents and the applicable CONCEPTS. The training requirement is added to the funding projection for the system it supports. The AFSPC PEM is responsible for modifications less than $10 million. Modifications greater than $10 million and less than $65 million require ICT review of the AF Form 1067 prior to JCIDS actions.

5.2.4.4. Some training programs are not linked to a specific fielded system and therefore not subject to TPT oversight. In this case, XOT will review user recommendations to determine if new programs or changes to existing programs are appropriate for command training, then forward the requirement to DR and XP. Funding for these training systems will be included in the most closely aligned program element, based on Assistant XO approval.

5.2.4.5. The TPTs will develop alternate operations training strategies in the STP to be implemented if funding shortfalls adversely impact training system acquisition, modification, or support. Implementation of alternate strategies will not take place without XO approval. Methodologies that are not compliant with off-line training guidance require a XO waiver, granted

for a fixed time period specified in the waiver request.

5.3. **Training System Funding.** The STP is the basis for POM inputs for training system sustainment and acquisition. Permanent modifications to prime mission systems must include corresponding modifications to the training system. Funding for training system modifications for technology insertion, performance enhancement, and improved reliability and maintainability shall be included in the prime mission funding. PEMs must ensure that funding for training systems is identified during budget and POM submissions and accurately tracked during execution to ensure training systems are adequately funded.

5.4. **Annual Training Conference.** Following the TPT meetings, XOT will host an operations training conference. The conference will focus on the key elements of command training systems: courseware, facilities, training devices, logistics support, administration and management, configuration management, instructors and training media. Operations conference participants include representatives from unit OSOT, 14 AF/A3 and 20 AF/DO, SWC, 381 TRG, AETC, SMC/AXLY, HQ AFSPC/XO, the SPOs and AF/XOSO.

5.4.1. Prior to the conference, XOT will request discussion topics and will also consider issues surfaced during the Training Call, NAF training/evaluation conferences or identified by the TPTs. During the conference, XOT will present a consolidated status report on current and emerging command training systems, based on inputs from the TPTs, the PEMs, and DR.

5.4.2. Action items identified during the training conference will be tracked by XOT until closure. XOT will provide quarterly status updates on action items to responsible organizations.

5.5. **Training Device Management.** See AFSPCI 36-2205, ***Operation and Management of Space Training Devices*** and AFSPCI 21-114 for details on acquisition, testing, modification, operation, support and certification of training devices managed by XO and LC.

5.6. **Acceptance of Training Systems.** Ensure the following prior to acceptance:

5.6.1. Compliance. The training system must be consistent with the ISD principles, HLA compliant (as required) and comply with off-line training equipment guidance (see paragraph **4.8.**).

5.6.2. The STP has been completed/updated to reflect required training system capabilities.

5.6.3. Courseware has been developed and validated.

5.6.4. AETC resource impacts (manpower, equipment, student manyears, etc.) have been resolved.

5.6.5. If applicable, contractor-conducted training is complete.

5.6.6. Logistics support and a configuration management process are in place.

5.6.7. Technical data/manuals have been updated.

5.6.8. SIMCERT/SIMVAL programs have been established/updated.

DOUGLAS M. FRASER, Brig Gen, USAF
Director of Air and Space Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 10-6, ***Mission Needs and Operational Requirements***

AFPD 10-9, ***Lead Operating Command Weapon Systems Management***

AFPD 36-22, ***Military Training***

AFI 10-601, ***Capabilities Based Operational Requirements***

AFI 21-114, ***Managing Intercontinental Ballistic Missiles Maintenance***

AFI 21-116, ***Maintenance Management of Communications-Electronics***

AFI 36-2201, Volume 1, ***Training Development, Delivery, and Evaluation***

AFI 36-2251, ***Management of Air Force Training Systems***

AFMAN 36-2247, ***Planning, Conducting, Administering, and Evaluating Training***

AFSPCI 36-2203, Volume 1, ***14 AF Training and Evaluation Performance Standards (TEPS)***

AFSPCI 36-2203, Volume 2, ***20 AF Training and Evaluation Performance Standards (TEPS)***

AFSPCHOI 10-1, ***Mission Needs and Operational Requirements Guidance and Processes***

AFSPCHOI 16-10, ***Headquarters Air Force Space Command Corporate Structure***

Abbreviations and Acronyms

AETC—Air Education and Training Command

AF—Air Force

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFOTEC—Air Force Operational Test and Evaluation Center

AFPAM—Air Force Pamphlet

AFPD—Air Force Policy Document

AFRL—Air Force Research Laboratory

AFSPC—Air Force Space Command

ASC—Aeronautical Systems Center

C4I—Command, Control, Communications, Computers and Intelligence

C4ISP—Command, Control, Communications, Computers and Intelligence Support Plan

CDD—Capability Development Document

CLS—Contractor Logistics Support

CPD—Capability Production Document

CRE—Course Resource Estimate

CS—Contractor Support

DAA—Designated Approval Authority

DoD—Department of Defense

DoDI—Department of Defense Instruction

ESC—Electronic Systems Center

HLA—High Level Architecture

HQ—Headquarters

IAW—In accordance with

ICD—Initial Capabilities Document

ICT—Integrated Concept Team

IIA—Integrated Investment Analysis

IPP—Integrated Planning Process

IPT—Integrated Product Team

IOC—Initial Operational Capability

IQT—Initial Qualification Training

ISD—Instructional Systems Development

IT—Information Technology

JCIDS—Joint Capabilities Integration and Development System

MAA—Mission Area Assessment

MAJCOM—Major Command

MAP—Mission Area Plan

MER—Manpower Estimate Report

MNA—Mission Needs Assessment

MSA—Mission Solutions Analysis

MSP—Mission Support Plan

MTL—Master Task List

NAF—Numbered Air Force

NORAD—North American Aerospace Defense Command

OO-ALC—Ogden Air Logistics Center

OPR—Office of Primary Responsibility

ORD—Operational Requirements Document

OT&E—Operational Test and Evaluation

PEM—Program Element Monitor

POC—Point of Contact

POM—Program Objective Memorandum

RDT&E—Research, Development Test and Evaluation

JCIDS—Requirements Generation System

SAMP—Single Acquisition Management Plan

SIMCERT—Simulator Certification

SIMVAL—Simulator Validation

SMC—Space and Missile Systems Center (AFSPC)

SMP—Strategic Master Plan

SPD—System Program Director

SPO—System Program Office

SSAA—System Security Authorization Agreement

STAO—Space Training Acquisition Office (SMC)

STP—System Training Plan

STRP—Standardization and Training Review Panel

TPR—Trained Personnel Requirement

TPIPT—Technical Planning Integrated Product Team

TPT—Training Planning Team

TRG—Training Group

TSRA—Training System Requirement Analysis

UQT—Unit Qualification Training

USNORTHCOM—United States Northern Command

USSTRATCOM—United States Strategic Command

VAFB—Vandenberg Air Force Base

Terms

Air Force Enterprise Network—All Air Force network capabilities managed under the three-tiered Enterprise Network Management structure consisting of Network Control Centers at base-level, Network Operations and Security Centers at MAJCOM-level, and the Air Force Network Operations Center and

Air Force Computer Emergency Response Team at the Air Force-level. (AFDD 2-5, ***Information Operations***)

Concurrency—The condition of ready for training being achieved on the training need date, and the functions and operation of the training system and its supporting equipment and materials must match the supported prime mission system.

Contract Logistics Support (CLS)—A pre-planned method used to provide all or part of the logistics support for a system, subsystem, modification, or equipment throughout its entire life cycle. CLS covers depot maintenance and, as negotiated with the User Command, necessary organizational and intermediate level maintenance, software support, and other operation and maintenance tasks.

Human Systems Integration (HSI)—The process of effective integration of human factors engineering, manpower, personnel, training, health hazards, and safety considerations into the acquisition of prime mission systems to improve total system performance and reduce costs by focusing attention on the capabilities and limitations of humans. (See DoDI 5000.2-R).

Instructional System Development (ISD)—A deliberate and orderly process for planning and developing instructional programs that make sure personnel are taught the knowledge, skills, and attitudes essential for successful job performance. Depends on a description and analysis of the tasks necessary for performing the job, objectives, and tests clearly stated before instruction begins, evaluation procedures to determine whether or not the objectives have been reached, and methods for revising the process based on empirical data. (See AFMAN 36-2234)

Master Task List (MTL)—Documentation of total training tasks developed for a prime mission system and its respective mission. It includes the entire spectrum of tasks in each functional area (operations, maintenance, and support) requiring training. The MTL provides the training task baseline for all acquisition, modification, support, management, and funding actions through comparison with predecessor or future prime mission systems.

Prime Mission System—Any weapon system, support system, work station, or end item that supports a specific military mission, therefore, requiring operations, maintenance, or support personnel training.

Program Manager (PM)—The PM has life-cycle responsibility for the prime mission system. PM duties include providing assessments of program status and risk to higher authorities and to the operator or operator's representative; actively managing within approved resources, program cost, performance, and schedule; and providing assessments of contractor performance.

Simulator Certification (SIMCERT)—The process of ensuring through validation of hardware and software baselines that a training system and its components provide accurate and credible training. The process also makes sure the device continues to perform to the delivered specifications, performance criteria, and configuration levels. It will also set up an audit trail regarding specification and baseline data for compliance and subsequent contract solicitation or device modification.

Simulator Validation (SIMVAL)—The process for (1) comparing a training device's operating parameters and performance to current intelligence assessment of a weapon system, threat, and interaction between the weapon system and threat and (2) documenting the differences and impacts. This process includes generation and deployment of an intelligence data baseline of the system, comparison of simulator characteristics and performance, support for the modification and upgrade of the simulator, a comparison of simulator and threat operating procedures, and correction of any significant deficiencies.

Uncorrected deficiencies are identified and published in validation reports. The process continues throughout the lifecycle of the simulator.

System Training Plan (STP)—The STP is an iterative planning document that defines the justification, design, development, funding, resources, support, modification, operation, and management of a training system. The STP is designed to provide for planning and implementation of training and to make sure all resources and supporting actions required for establishment and support are considered.

Technical Planning Integrated Product Team (TPIPT)—TPIPTs are multi-constituent teams of operators and AFMC/AFSPC laboratories, System Program Offices, development planners, and industry to generate, consolidate, and analyze an array of concept options and technology needs that address the operators' needs.

Training Device—A hardware device that permits learning, development, and the practice of skills and procedures necessary for understanding and operating the integrated systems of a specific prime mission system.

Training Planning Team (TPT)—An action group composed of representatives from all pertinent functional areas, disciplines, and interests involved in the life cycle design, development, acquisition, support, modification, funding, and management of a specific prime mission training system. The TPT uses the STP to ensure training considerations are adequately addressed in the prime mission system acquisition and modification processes.

Training Requirement—The skills and knowledge that are required for satisfying the job performance requirements and are not already in the students' repertoire.

Training System—A systematically developed curriculum including, but not necessarily limited to, courseware, classroom aids, training simulators and devices, operational equipment, embedded training capability, and personnel to operate, maintain, or employ a system. The Training System includes all necessary elements of logistic support.

Training Systems Requirements Analysis (TSRA)—The initial step in user requirements identification. It consists of mission/task analysis, training requirements identification, objectives/media analysis, and training systems basis analysis. A TSRA integrates the products of the Instructional System Development (ISD) process and the Systems Engineering (SE) process to describe the Training System to be procured. It serves as a required input to the System Training Plan. It is accomplished by the PM.

Attachment 2

TRAINING SYSTEM REQUIREMENTS: CONSIDERATIONS

Initial skills and supplemental training

Unit qualification, mission ready, and recurring training.

Contractor training (course documentation, technical orders, maintenance manuals, and training materials)

Training system sustainment, concurrency

Off-line training systems

Dedicated training devices (e.g. part task trainers, simulators) for equipment familiarization, practicing performance procedures, developing mechanical skills, and reinforcing academic instruction.

Training system fidelity will be determined by analysis of training requirements using the ISD process.

High Level Architecture (HLA) compliance requirements. The training system operates without impacting or being impacted by other simulation requirements for software testing and development, anomaly resolution, or operational maintenance.

Training devices meet AFSPC knowledge and task proficiency levels

Trained Personnel Requirements

Key training equipment performance parameters:

- Fidelity
- Emulation capability
- Positional and crew training
- Appropriate spectrum of stimuli
- Multiple scenario presentation modes
- Instructor feedback tools (real time monitoring, playback, audio-visual, classroom-simulator mix)

Attachment 3

METRIC TEMPLATES

Units will provide semiannual inputs on operations training devices to XOT by 31 January and 31 July using the formats and instructions below. XOT will consolidate unit reports to present the overall status of command training systems.

1. Time to Train: Average Time to Combat Mission Ready (CMR)

Units will report the number of calendar days to complete UQT and certification requirements to bring IQT graduates to CMR status.

2. Training Device Fidelity/Task Coverage.

Use the Job Performance Requirements List and Proficiency Levels in AFSPCI 36-2203, Volumes 1 or 2 to provide a subjective assessment of training device fidelity in a stoplight chart. Provide narrative to further explain the rationale for the rating assigned (see Figure A (3).2.). Our goal is to have training devices that look, sound, and feel like the actual operational equipment to achieve and maintain required proficiency levels. These systems should emulate appropriate position console displays, messages and operational support equipment. Fidelity categories:

Physical (degree of physical representation, appearance, feel and function)

Functional (data change rates, display response, system performance)

In addition, use the Job Performance Requirements List and Proficiency Levels to indicate the percentage of the training system's coverage of designated tasks at the specified level of learning. (See **Figure A3.1.**below). Goal: 90%

Figure A3.1. Training System Fidelity/Task Coverage.

Training Device	Physical	Functional	Task Coverage	Comments
CTE	R	Y	87%	Part-task emulator used for multiple systems, limited functional capability, physical characteristics do not compare to prime systems
X (example)	Y	R	65%	Software upgrade to prime system not replicated in training system. Functionality and task coverage does not match the prime system in several key areas.
MPT	G	G	92%	Fidelity and task coverage are adequate for training at the appropriate proficiency levels.

3. Simulator Performance.

Utilization: Report Available/Scheduled/Actual hours per month for each training device. Example: 448 / 336 / 331 (device available 16 hours/day [not including scheduled maintenance] x 7 days x 4 weeks = 448 hours, scheduled for 12 hours/day = 336 hours, 5 hours of lost utilization = 331). Include an explanation for lost training time. The intent is to reflect utilization of available trainer time and lost training time due to unscheduled maintenance, equipment failure, etc.

Reliability: Mean Time Between Maintenance (**MTBM**). Average time between maintenance events, based on operating hours. Tracked by month.

Maintainability: Mean Downtime (**MDT**). Average elapsed time between loss of mission capable status and system restoration to at least partial mission capable status. This includes maintenance and supply response, administrative delays, actual on-equipment repair and other activities such as training and preventive maintenance. Tracked by month.